

In the Claims:

1. (Previously Presented) An expanding method for expanding an adhesive sheet with respect to a plate-like article stuck to said adhesive sheet, mounted to a ring-shaped frame through said adhesive sheet, and diced into individual chips by a dicing device, after the dicing to increase spacings between said individual chips, comprising:

    a conveying step of conveying said plate-like article together with said chuck stage of said dicing device to a different area in said dicing device without being detached from said chuck stage after the dicing of said plate-like article;

    an expanding step of expanding said adhesive sheet with said plate-like article being mounted to said frame; and

    an expansion maintaining step of maintaining an expanded state of said adhesive sheet with said plate-like article being mounted to said frame after said expanding step,

    wherein at least said expansion maintaining step is performed in said different area, and

    said plate-like article is able to be conveyed together with said frame with the increased spacings between said chips being maintained.

2. (Original) The expanding method according to claim 1, wherein said expanding step includes a step of heating and stretching said adhesive sheet.

3. (Original) The expanding method according to claim 1, wherein said expanding step includes a step of forming a protrusion in a portion of said adhesive sheet between said frame and said plate-like article, and

    said expansion maintaining step includes a step of welding or bonding a base of said protrusion of said adhesive sheet.

4. (Original) The expanding method according to claim 3, wherein said base of said protrusion formed in said adhesive sheet is ultrasonically welded.

5. (Previously Presented) The expanding method according to claim 1, wherein said expanding step is performed with said plate-like article being placed on said chuck stage of said dicing device, and includes a step of temporarily maintaining the expanded state of said adhesive sheet on said chuck stage using a clamping member, and

said expansion maintaining step includes a step of forming a loose part outside said clamping member of said adhesive sheet to nip and secure a base of said loose part of said adhesive sheet.

6. (Previously Presented) The expanding method according to claim 5, wherein said expanding step is performed in a dicing area of said dicing device after the dicing of said plate-like article, and

said plate-like article with the expanded state of said adhesive sheet being temporarily maintained is conveyed to a different area in

said dicing device together with said chuck stage.

said expansion maintaining step is performed in said different area.

7. (Previously Presented) The expanding method according to claim 5, wherein said expanding step and said expansion maintaining step are performed in said different area in said dicing device.

8. (Original) The expanding method according to any one of claims 5, 6 and 7, wherein said expansion maintaining step includes a step of securing said base of said loose part of said adhesive sheet by welding or bonding.

9. (Original) The expanding method according to claim 1, wherein a heat-shrinkable sheet is used as said adhesive sheet, and

said expanding step and said expansion maintaining step are simultaneously performed by heating said adhesive sheet in at least a pair of areas sandwiching said plate-like article in parallel with a dicing line of said plate-like article in the portion of said adhesive sheet between said plate-like article and said frame.

10. (Original) The expanding method according to claim 9, wherein said adhesive sheet is heated in at least a pair of areas sandwiching said plate-like article in parallel with a dicing line in one direction of said plate-like article, and in at least a pair of areas sandwiching said plate-like article in parallel with a dicing line perpendicular to the dicing line in said one direction, and

heating temperatures of said areas are individually controlled according to the state of increase in the spacings between said individual chips.

11. (Previously Presented) The expanding method according to claim 9 or 10, wherein after the dicing of said plate-like article, said adhesive sheet is heated without said plate-like article being detached from said chuck stage of said dicing device.

12. (Original) The expanding method according to claim 1, wherein a heat-shrinkable sheet is used as said adhesive sheet,

said expanding step includes a step of applying tension to said adhesive sheet, and

said expansion maintaining step includes a step of forming a loose part in a portion of said adhesive sheet between said plate-like article and said frame, and heating and shrinking said loose part to eliminate said loose part.

13. (Original) The expanding method according to claim 12, wherein said loose part is formed after the expanded state of said adhesive sheet in the portion on which said expanded plate-like article is stuck is maintained by suction or mechanically, and

said maintenance by suction or mechanical maintenance is released after said loose part is heated and shrunk.

14. (Original) The expanding method according to claim 12 or 13, wherein said plate-like article and said frame are relatively separated to expand said adhesive sheet, and

the relative separation between said plate-like article and said frame is terminated to form said loose part.

15. (Original) The expanding method according to claim 12 or 13, wherein said adhesive sheet is pressed between said plate-like article and said frame to expand said adhesive sheet, and

the press of said adhesive sheet between said plate-like article and said frame is released to form said loose part.

16. (Previously Presented) The expanding method according to any one of claims 12, and 13, wherein a portion of said adhesive sheet outside said plate-like article is heated in a ring shape to shrink said loose part.

17. (Previously Presented) The expanding method according to any one of claims 12, and 13, wherein after the dicing of said plate-like article, said adhesive sheet is expanded without said plate-like article being detached from said chuck stage of said dicing device.

18. (Original) The expanding method according to claim 1, wherein said expanding step includes a step of relatively vertically separating said plate-like article and said frame, and applying a lateral force to said adhesive sheet, and

said expansion maintaining step includes a step of sticking a different ring-shaped frame to said expanded adhesive sheet, and cutting said adhesive sheet near an outer periphery of said different frame.

19. (Original) The expanding method according to claim 18, wherein said lateral force applied to said adhesive sheet is applied by inflating an airbag.

20. (Previously Presented) The expanding method according to claim 18 or 19, wherein said frame and said different frame are of the same type and dimensions.

21-30. (Cancelled).